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EXAMINER

MUSSER, BARBARA J

ART UNIT PAPER NUMBER

1733

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/791,970

Applicant(s)

PENG ET AL.

Examiner

Barbara J. Musser

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**– The MAILING DATE of this communication appears on the cover sheet with the correspondence address –**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 3/2/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 3 and 7 are objected to because of the following informalities: in line 3, the phrase "between about 1/16 inch to ¼ inch" appears. Grammatically, this should be either --between about 1/16 inch and ¼ inch—or --from about 1/16 inch to ¼ inch--.
- Claim 10 is objected to because of the following informalities: in line 2, the word "material" is singular when it should be plural as is the verb following it in the next phrase. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:  
  
The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
3. Claims 1-14 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 1, it is unclear what material in the claim is the fiber cement board as is not in the body of the claim. For the purposes of examination, the claim is considered to require a fiber cement board.

Claim 7 recites the limitation "the rubber sheet" in line 1. There is insufficient antecedent basis for this limitation in the claim. Since the only claim having a step of "placing a rubber sheet" is claim 2, this claim is considered to be dependent from claim

2. It is noted that if so, this claim is identical to claim 3.

Regarding claim 9, it is unclear which rubber thickness is being measured as it would seem that the thickness of the side belts should be greater than that of the substrate, film, and first layer of adhesive, since the first layer of adhesive has a width in the vertical direction while the second layer of adhesive has a width in the horizontal direction. For the purposes of examination, the thickness of the side belts is considered to include the thickness of the first adhesive layer rather than the second.

Regarding claim 10, it is unclear whether each of the support materials has a width smaller than that of the substrate or whether all of them taken together do.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Ettore et al.(U.S. Patent 3,475,261).

Ettore et al. discloses a method of applying a polyvinyl fluoride film to a substrate by applying adhesive to the front, back, and sides of the substrate, placing the polyvinyl fluoride film on the substrate, wrapping the film around the substrate to contact the back and sides(34; Figure 4), and applying heat and pressure so that the film is bonded to the back and sides of the substrate.(Col. 1, ll. 55-60; Col. 5, ll. 35-38, 59-61; Col. 6, ll. 33-35) It is noted that the claim does not require a fiber cement board as the body of

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the claim does not refer back to the preamble. It is noted that all materials have a texture of some sort, be it smooth or rough.

***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 4, 5, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simms(U.S. Patent 3,133,854) in view of Ettore et al. and Petropoulos(U.S. Patent 3,313,675).

Simms discloses applying a polyvinyl fluoride to an asbestos cement or wood substrate using an adhesive.(Figure; Col. 3, ll. 39-40) Asbestos is considered a type of fiber. This laminate can be used as siding or roofing.(Col. 6, ll. 43-46) The reference does not disclose the specifics of the application of the film to the substrate other than that the adhesive is applied to the substrate and is bonded under heat and pressure.(Col. 7, ll. 45-53) Ettore et al. discloses applying a polyvinyl fluoride film to a substrate by applying adhesive to the front, back, and sides of the substrate, placing the polyvinyl fluoride film on the substrate, wrapping the film around the substrate to contact the back and sides(34; Figure 4), and applying heat and pressure so that the film is bonded to the back and sides of the substrate.(Col. 1, ll. 55-60; Col. 5, ll. 35-38, 59-61; Col. 6, ll. 33-35) It would have been obvious to one of ordinary skill in the art at the time

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the invention was made to bond the polyvinyl fluoride to the substrate in Simms using the process of Ettore et al. since Ettore et al. shows how to apply a polyvinyl fluoride film so that it covers the entire substrate as is desired in building materials such as siding and roofing(Col. 1, ll. 41-45) Simms and Ettore et al. do not disclose the fiber cement board having a texture. Petropoulos et al. discloses that generally asbestos cement board have a plurality of protuberances and valleys, therefore having a texture.(Col. 2, ll. 12-15) It would have been obvious to one of ordinary skill in the art at the time the invention was made that the cement asbestos board of Simms and Ettore et al. would have a texture since Petropoulos et al. discloses that all such board has a texture.

Regarding claim 4, Ettore et al. discloses using a roller to press the film against the substrate(30), and uses a plurality of vertical rollers to press the film against the sides of the substrate.(83) The roller is considered a horizontal member since its axis is oriented horizontally.

Regarding claim 5, the roller of Ettore et al. is considered a continuous isobaric press since it presses continuously with an even pressure across the length of the roller.

Regarding claim 11, while Ettore et al. does not disclose the specific temperature and pressure ranges claimed, one in the art would appreciate that the temperature and pressure required would be dependent on the adhesive and the substrate, and would have been within the purview of one in the art. Only the expected results would be achieved.

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8. Claims 2, 3, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simms, Ettore et al., and Petropoulos et al as applied to claims 1 and 5 above, and further in view of the admitted prior art as evidenced by Ewaschuk(U.S. Patent 5,728,246)

The references cited above do not disclose the specifics of the bonding apparatus. The admitted prior art discloses that membrane presses are well-known for bonding films to substrate by pressing the film so that it conforms to the shape of the substrate, but do not disclose the specifics of the devices as part of the admitted prior art.([0053],[0056]) Ewaschuk discloses that membrane vacuum presses conventionally have a rubber membrane which pressing a layer against a substrate.(Col. 4, ll: 37-41) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use a membrane press to press the film against the substrate since the admitted prior art discloses such presses are well-known for pressing a film so that it conforms to the shape of the substrate.[0053] Such presses use a rubber sheet which presses against the side of the film opposite the substrate.

Regarding claims 3 and 7, while the references cited above do not discloses the thickness or hardness of the rubber membrane, the thicknesses and hardnesses of rubber sheets used in membrane presses are well-known in the press art and well within the purview of choice of one skilled in the art.

Regarding claim 10, Simms and Ettore et al. do not disclose a plurality of supports under the substrate. Ewaschuk discloses a plurality of supports(42) under the pressing location, which together are less than the width of the substrate.(Figure 9; Col.

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4, ll. 43-47) It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a plurality of support blocks which together are less than the width of the substrate since Ewaschuk discloses this will allow substantially uniform pressure over the entire edge.(Col. 4, ll. 44-47)

9. Claims 4-6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Simms, Ettore et al., and Petropoulos et al as applied to claim 1 above, and further in view of the admitted prior art.

The references cited above do not disclose a bonding apparatus having a horizontal member comprising a metal platen covered with a rubber layer and vertical members comprising a plurality of rubber belts. However, applicant appears to indicate that such is a well-known type of bonding apparatus as applicant indicates the membrane presses, vacuum presses, and continuous isobaric presses are known in the art.([00523]-[0057]) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use any well-known type of press to press the film against the cement board since such devices are well-known in general in the bonding arts as indicated by applicant's own admitted prior art.([0053]-[0057])

Regarding claim 8, while the references cited above do not disclose the thickness or hardness of the rubber membrane, the thicknesses and hardnesses of rubber sheets used in membrane presses are well-known in the press art and well within the purview of choice of one skilled in the art.

Regarding claim 9, since the purpose of the side belts is to apply pressure to the side of the substrate to bond the film to the substrate, one in the art would appreciate



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that the side belts would be greater than the combined width of the laminate, i.e. of the substrate, first adhesive layer, and film, so as to apply the pressure evenly to the entire side of the laminate.

10. Claims 1 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Petropoulos et al., Ettore et al., and Yang et al.(U.S. Patent 6,020,429)

Petropoulos et al. discloses applying a polyvinyl fluoride film to a cement asbestos board with a texture(Col. 2, ll. 12-15) covered with a paper layer to form an outdoor article, but does not discloses the specifics of the application.(Col. 1, ll. 10-13; Col. 6, ll. 42-50) Ettore et al. discloses applying a polyvinyl fluoride film to a substrate by applying adhesive to the front, back, and sides of the substrate, placing the polyvinyl fluoride film on the substrate, wrapping the film around the substrate to contact the back and sides(34; Figure 4), and applying heat and pressure so that the film is bonded to the back and sides of the substrate.(Col. 1, ll. 55-60; Col. 5, ll. 35-38, 59-61; Col. 6, ll. 33-35) It would have been obvious to one of ordinary skill in the art at the time the invention was made to bond the polyvinyl fluoride to the substrate in Petropoulos et al. using the process of Ettore et al. since Ettore et al. shows how to apply a polyvinyl fluoride film so that it covers the entire substrate as is desired in building materials such as siding and roofing(Col. 1, ll. 41-45) It is noted that all material have a texture of some sort, be it smooth or rough. The references cited above do not disclose the adhesive used to bond the film to the substrate. Yang et al. discloses using a hot melt polyurethane comprising isocyanate and hydroxyl groups with a catalyst to bond a polyvinyl fluoride film to fibrous or non-fibrous materials.(Abstract; Col. 7, ll. 9-15; Col. 8,

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II. 50-57; Col. 9, II. 9-11, 22) It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the adhesive of Yang et al. comprising polyurethane comprising isocyanate and hydroxyl groups with a catalyst to bond the polyvinyl fluoride film to the substrate in Petropoulos et al. and Ettore et al. since it can bond polyvinyl fluoride to any number of materials, particularly cellulosic materials such as paper and since it uses less catalyst to achieve a better cure rate than other polyurethanes.(Col. 1, II. 54-57; Col. 9, II. 9-15)

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Barbara J. Musser whose telephone number is (571) 272-1222. The examiner can normally be reached on Monday-Thursday; alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571)-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



BJM



**SAM CHUAN YAO  
PRIMARY EXAMINER**